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a substrate,
a first electrode disposed on the
substrate,
an intermediate member disposed on said
first electrode, and having a side wall which includes an
electron-emission layer containing an electrical
discontinuity,

a second electrode spaced from said
substrate in a direction normal to said substrate, wherein
said electron-emission layer extends from said first
electrode to said second electrode, and

a voltage applier, arranged for applying
a voltage across the first and second electrodes to generate
an electric field across a surface of the electron-emission
layer for causing the electron-emission layer to emit an
electron; and

a fluorescent device plate including:

a transparent substrate,
a fluorescent layer,
an acceleration electrode, and
an acceleration voltage applier, arranged
for applying an acceleration voltage to the acceleration
electrode,

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wherein the electron source plate and the
fluorescent device plate form a vacuumed housing wall of the
display device.

44. The display device of Claim 43, wherein said
electron-emission layer comprises a conductive region and an
insulating region.

45. The display device of Claim 43, wherein said
electron-emission layer contains carbon.

46. The display device of Claim 43, wherein an end
of one of the first and second electrodes is flush with the
sidewall of the intermediate member.

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47. (Amended) A display apparatus comprising:
an electron source plate including:
a substrate,
a first electrode arranged on the
substrate,
an insulating member arranged on the
substrate so that an end of the insulating member forms a
sidewall on the substrate,
a second electrode arranged on the
insulating member, and

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an electron-emission layer containing an electrical discontinuity, the electron-emission layer being disposed on the sidewall of the insulating member and extending from the first electrode to the second electrode, for emitting electrons upon an application of an electric field across the first and second electrodes, and

a voltage applier, arranged for applying a voltage across the first and second electrodes to generate an electric field across a surface of the electron-emission layer; and

a fluorescent device plate including:

a transparent substrate,

a fluorescent layer,

an acceleration electrode, and

an acceleration voltage applier, arranged for applying an acceleration voltage to the acceleration electrode,

wherein the electron source plate and the fluorescent device plate form a vacuumed housing wall of the display apparatus.

48. (Amended) The display apparatus of Claim 47, wherein said voltage applier has a pair of electrodes including an upper electrode positioned at an upper part of

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the sidewall of the insulating member and a lower electrode positioned at a lower part of the sidewall of the insulating member, and wherein said voltage applier generates the electric field across the surface of the electron-emission layer.

49. The display apparatus of Claim 47, wherein said electron-emission layer comprises a conductive region and an insulating region.

50. The display device of Claim 47, wherein said electron-emission layer contains carbon.

51. (Amended) A display apparatus comprising:
an electron source plate including:
a substrate, and
a plurality of electron emission elements
arranged in a matrix of rows and columns on said substrate,
each electron emission element being formed in a laminated structure and comprising:
a first electrode disposed on the
substrate,
an intermediate member disposed on
said first electrode, and having a side wall which includes
an electron-emission layer containing an electrical

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discontinuity, wherein the electron-emission layer emits an electron upon an application of a low voltage across a surface thereof, and

a second electrode spaced from said substrate in a direction normal to said substrate, wherein the electron-emission layer extends from the first electrode to the second electrode;

a matrix wire configuration comprising row wires and column wires respectively corresponding to the rows and columns of the electron emission elements arranged in the matrix;

a signal applier, arranged for applying (i) a scan signal to the row wires, and (ii) a modulation signal to the column wires corresponding to the scanned electron emission elements, to cause a low voltage to be applied across the first and second electrodes of each of the electron emission elements, wherein said signal applier applies the modulation signal to the column wires in synchronization with the application of the scan signal to the row wires; and

a fluorescent device plate including:

a transparent substrate,

a fluorescent layer,

an acceleration electrode, and

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an acceleration voltage applier,
arranged for applying an acceleration voltage to the
acceleration electrode,

wherein the electron source plate and the
fluorescent device plate form a vacuumed housing wall of the
display device.

52. (Amended) The display apparatus of Claim 51,
wherein said signal applier simultaneously applies the
modulation signal to the electron emission elements on a
selected row in synchronization with the scan signal.

53. (Amended) A display apparatus comprising:
an electron source plate including:
a substrate, and
a plurality of electron emission
elements arranged in a matrix of rows and columns on said
substrate, each electron emission element including:
a first electrode arranged
on the substrate,
an insulating member
arranged on the substrate so that an end of the insulating
member forms a sidewall on the substrate,
a second electrode
arranged on the insulating member, and

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an electron-emission layer
containing an electrical discontinuity, said electron-
emission layer being disposed on the sidewall of the
insulating member and extending from the first electrode to
the second electrode for emitting electrons upon an
application of a low voltage across the first and second
electrodes;

a matrix wire configuration which
comprises row wires and column wires respectively
corresponding to the rows and columns of the electron
emission elements arranged in the matrix;

a signal applier, arranged for
applying (i) a scan signal to the row wires, and (ii) a
modulation signal to the column wires corresponding to the
scanned electron emission elements, to cause a low voltage to
be applied across the electron-emission layer of each
electron emission element, wherein said signal driver applies
the modulation signal to the column wires in synchronization
with the application of the scan signal to the row wires; and

a fluorescent device plate including:

a transparent substrate,

a fluorescent layer,

an acceleration electrode, and

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an acceleration voltage applier,
arranged for applying an acceleration voltage to the
acceleration electrode,

wherein the electron source plate and the
fluorescent device plate form a vacuumed housing wall of the
display device.

54. (Amended) The display apparatus of Claim 53,
wherein said signal applier simultaneously applies the
modulation signal to the electron emission elements on a
selected row in synchronization with the scan signal.

55. (Amended) The display apparatus of Claim 53,
wherein said signal applier has a pair of electrodes
including an upper electrode positioned at an upper part of
the sidewall of the insulating member and a lower electrode
positioned at a lower part of the sidewall of the insulating
member, and wherein said signal applier generates an electric
field across the surface of the electron-emission layer.

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56. (Amended) A display apparatus comprising:
an electron source plate including:
a substrate, and

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a plurality of electron emission elements
arranged in a matrix of rows and columns on said substrate,
each electron emission element including:

a first electrode disposed on said
substrate,

a second electrode disposed on said
substrate, and

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an electron-emission layer
containing an electrical discontinuity, at least a portion of
said electron-emission layer extending between a surface of
the first electrode and a surface of the second electrode,
for emitting an electron upon an application of a low voltage
across said first and second electrodes;

a matrix wire configuration comprising
row wires and column wires respectively corresponding to the
rows and columns of the electron emission elements arranged
in the matrix;

a signal applier, arranged for applying
(i) a scan signal to the row wires, and (ii) a modulation
signal to the column wires corresponding to the scanned
electron emission elements, to cause a low voltage to be
applied across the first and second electrodes of each
electron emission element, wherein the signal applier applies
the modulation signal to the column wires in synchronization
with the application of the scan signal to the row wires; and

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a fluorescent device plate including:

a transparent substrate,

a fluorescent layer,

an acceleration electrode, and

an acceleration voltage applier,

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arranged for applying an acceleration voltage to the
acceleration electrode,

wherein the electron source plate and the
fluorescent device plate form vacuumed housing walls of the
display device.

57. The display apparatus of Claim 56 wherein said
modulation signal is made according to an information signal.

58. The display apparatus of Claim 56, wherein
said electron-emission layer comprises a conductive region
and an insulating region.

59. The display apparatus of Claim 56, wherein
said electron-emission layer contains carbon.

60. The display apparatus of Claim 56, wherein
said acceleration voltage is in the range of 0.8kV to 1.5kV.

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~~61~~. (Amended) The display apparatus of Claim 56,
wherein said signal applier simultaneously applies the
modulation signal to the electron emission elements on a
selected row in synchronization with the scan signal.

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~~62~~. The display apparatus of Claim ⁴³~~56~~, wherein
ends of said first and second electrodes are disposed in a
lateral direction at least roughly parallel to the surface of
the substrate and face each other, and said electron-emission
layer is disposed between the ends of those electrodes.

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~~63~~. (Amended) The display apparatus of Claim ⁴⁹~~62~~,
wherein said signal applier applies the voltage across the
electrodes to generate an electric field across the surface
of the electron-emission layer.

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~~64~~. The display apparatus of Claim ⁴³~~56~~, wherein
said voltage applied across said first and second electrodes
is less than or equal to 32 Volts.

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~~65~~. (Added) The display apparatus of any one of
Claims 51, 53, or 56, further comprising at least one grid
electrode disposed between said electron source plate and
said fluorescent device plate.